



Soil Navigator Decision Support System

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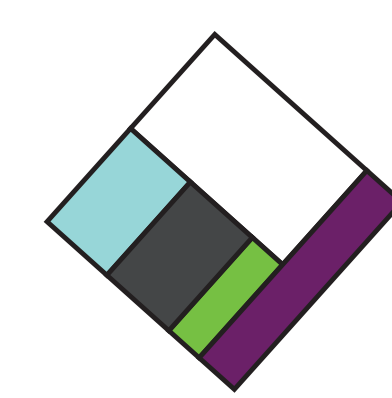
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SOIL NAVIGATOR DSS



A Decision Support System for assessing and optimizing soil functions

What is the Soil Navigator?

The Soil Navigator decision support system (DSS) was developed in the Horizon 2020 project LANDMARK. It assesses the initial capacity of five soil functions within a field including primary productivity, nutrient cycling, water purification and regulation, carbon sequestration and climate regulation, and biodiversity and habitat provision. In addition, this evidence based DSS offers targeted solutions and management recommendations to improve the capacity of several soil functions simultaneously and assisting farmers and farm advisors to make the right decisions for long term sustainability.

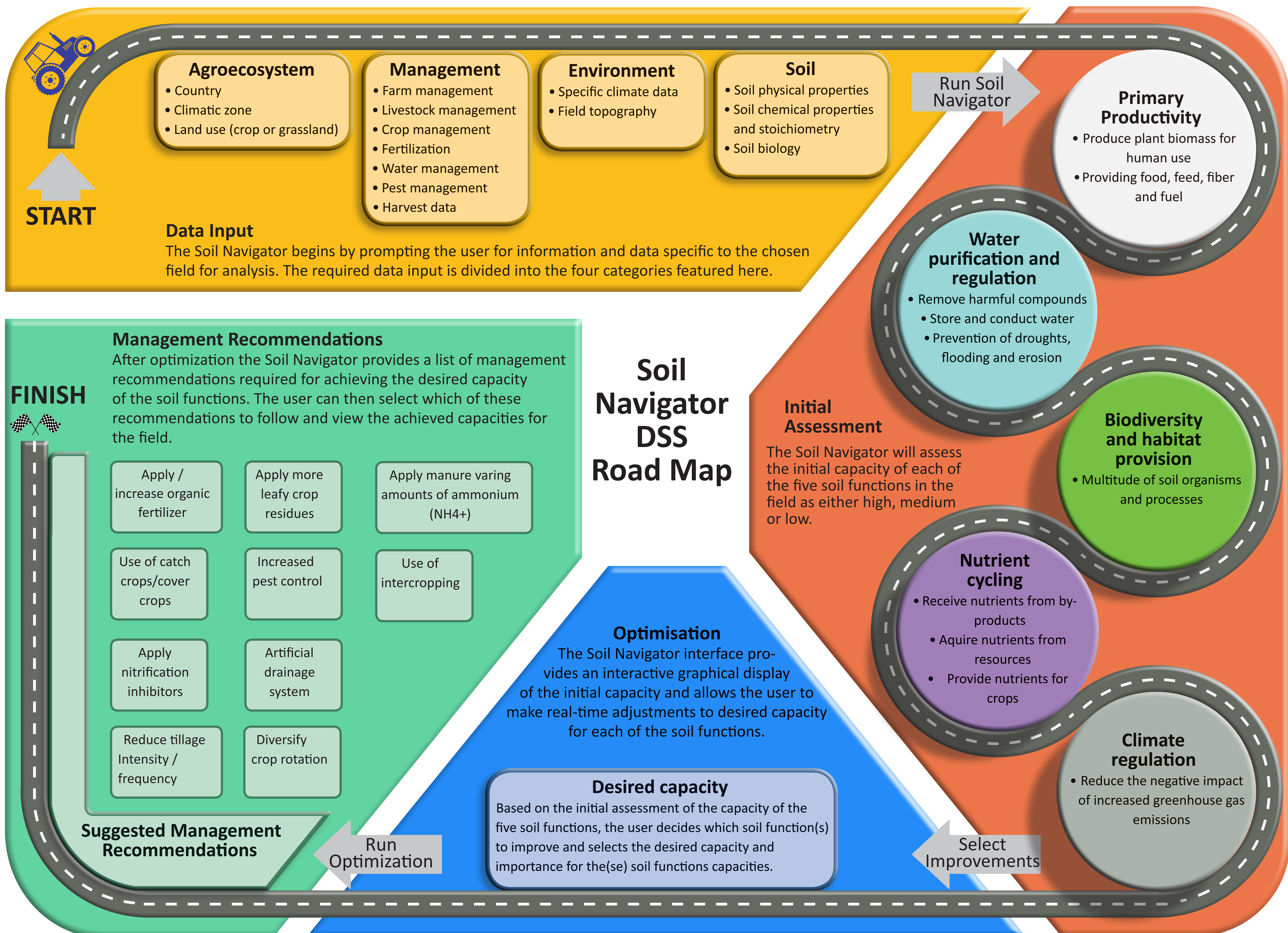


Image: Soil observations taken on site by experts while developing the soil navigator

How can I make the most of my land with the Soil Navigator?

- By assessing the initial capacity of the five main soil functions based on data obtained from the LANDMARK database coupled with data entered by the user
- By providing recommendations for the management practices required to achieve the desired capacity of the soil functions as specified by the user
- By showing the resulting capacity of the soil functions based on the management recommendations selected by the user

How it works:



Key Features

- Knowledge driven: The DSS integrates five DEX (Decision Expert) models, developed by domain experts within each of the five soil functions
- Real-data validation: The DEX models are validated against real data collected on more than 90 sites across Europe from the LANDMARK project.
- AI enriched the decision making process is supported using optimization of targets driven by emerging AI technologies for qualitative and quantitative modeling.
- User-friendly: The Soil Navigator is available as an intuitive web-based graphical interface complete with video tutorials in four languages, inbuilt help icons and explanatory texts.

The Soil Navigator DSS Potential

- The Soil Navigator DSS has a great potential to complement the Farm Sustainability Tool for Nutrients included in the Common Agricultural Policy 2021-2027 proposal adopted by the European Commission.
- The Soil Navigator DSS has potential to be spatially upgraded to assist decisions on which soil functions to prioritize in a specific region or EU member state.
- The Soil Navigator DSS could be used as an educational tool for farmers, farm advisors and students, and its potential should be further exploited for the benefit of farmers and the society as a whole.

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